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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2009*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Status of Claims

1.   Applicant's amendment, filed on 6/11/2009, has been entered and carefully considered. Claims 1-3, 11, 15, 17, 24, 27 and 30 have been amended. No claims canceled. Accordingly, claims 1-30 are pending.

2.   In light of Applicant's amendment, objections to claims 11 and 24, under minor informality, are withdrawn.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4.   **Claims 2, 3, 16, 17 , 27 and 30** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. When using the word "*said*" in place of an article, the claimed the limitation must have a clear and explicit antecedent basis. Claim 2 recites "said grouping", however, there's no clear and explicit antecedent for the limitation *grouping* (i.e. neither claim 1 nor 2 recites "*a grouping*"). The examiner recommends changing *"said grouping"* to "the grouping", should the Applicant choose to continue the prosecution. Appropriate correction is required. Claims 3, 16, 17, 27 and 30 are rejected for the similar reason.

Claim Rejections - 35 USC § 102

5.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6.   **Claims 1, 4, 8-10, 12-13, 15, 18, 22-23** and **25-30** are rejected under 35

U.S.C. 102(e) as being anticipated by US 7352688 B1 Perahia et al. (hereinafter

Perahia).

Regarding **claim 1** (currently amended), Perahia discloses *a method for transmitting*

data in a multiple antenna communication system having N (see at least column 4 lines

16-21) *transmit antennas* (see at least Abstract), *said method comprising the step of:*

- *transmitting a legacy preamble having at least one long training symbol* (see at
  least column Figure 5 lines 24-45),

- *and at least one additional* (e.g. two long training symbols as shown in Figure 5)
  long training symbol on each of said N transmit antennas(see at least column
  Figure 5 lines 24-45),

- *each of said long training symbols having a plurality* (e.g. 64 subcarrier values) *of*
  subcarriers (see at least column 3 lines 50-67),

- *wherein said subcarriers are grouped into a plurality of subcarrier groups* (e.g. by
  virtue transmitting via multiple antennas, in the system according to Perahia,
  each of these antennas is used to transmit OFDM symbols, wherein each OFDM
  symbol is modulated by a group of 64 subcarriers, therefore, each transmission
  of OFDM symbols on multiple antennas constitutes as grouping of subcarriers
  e.g. two antennas requires two groups of 64 sub-carriers, see at least column 3
  lines 54-60, column 4 lines 17-22 and column 5 lines 16-27),

- *and wherein each subcarrier group comprises two or more adjacent subcarriers*
  (e.g. "a series of 64 subcarriers values", therefore 64 adjacent subcarriers) *and is*

transmitted on a different transmit antenna in a given time interval (see at least

column 3 lines 54-60, column 4 lines 17-22 and column 5 lines 16-27) .

Regarding **claim 4** (original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

- *wherein each of said transmit antennas transmits a total of N* (e.g. 2) *long*

  training symbols (see at least Figure 5 and column 6 lines 29-45).

Regarding **claim 8** (original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

- *wherein said legacy preamble further comprises at least one short training*

  symbol (see at least Figure 5 and column 5 lines 30-35).

Regarding **claim 9**(original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

- *wherein said legacy preamble further comprises at least one SIGNAL field* (see

  at least Figure 5 and column 6 lines 52-57).

Regarding **claim 10**(original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

- *wherein said legacy preamble is an 802.11 a/g preamble* (see at least column 6

  lines 32-36).

Regarding **claim 12**(original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

- *wherein N is two and wherein said transmitting step further comprises* (see at

  least Figure 1-3)

      o *the step of transmitting a legacy preamble having at least one long training*

          symbol and one additional long training symbol (e.g. total of 2 LTS)*on*

          each of said two transmit antennas (see at least Figure 5),

      o *wherein half of the subcarriers* (e.g. subcarrier 0-31 of the 64 subcarriers,

          along with the subcarrier 32-64 of the 64 subcarriers) *of the long training*

          symbol are in a first subcarrier group (as applied to the first antenna) *and*

          the remaining half of the subcarriers (e.g. subcarrier 32-64 of the 64

          subcarriers, along with the subcarrier 0-31 of the 64 subcarriers) *of the*

          long training symbol are in a second subcarrier group (e.g. as applied to

          the second antenna) (see at least column 3 lines 54-60, column 4 lines

          17-22 and column 5 lines 16-27).

Regarding **claim 13**(original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses:

    • *whereby a lower order receiver* (e.g. SISO receiver) *can interpret said*

       transmitted data (see at least column 9 lines 44-65).

Regarding **claim 15** (currently amended), Perahia discloses a *transmitter in a multiple*

antenna communication system, comprising:

    • *N transmit antennas* (see at least Figure. 3) *for transmitting a legacy preamble*

       having at least one long training symbol (see at least column Figure 5 lines 24-

       45),

- *and at least one additional long training symbol*(e.g. two long training symbols as shown in Figure 5) *on each of said N transmit antennas* (see at least column Figure 5 lines 24-45),

- *each of said long training symbols having a plurality of subcarriers*(see at least column 3 lines 50-67),

- *wherein said subcarriers are grouped into a plurality of subcarrier groups* (e.g. by virtue of multiple antennas, each of these antennas is used to transmit OFDM symbols modulated by a group of 64 subcarriers, e.g. two antennas requires two groups of 64 sub-carriers, see at least column 3 lines 54-60, column 4 lines 17-22 and column 5 lines 16-27),

- *and wherein each subcarrier group <u>comprises two or more adjacent subcarriers and </u>*(e.g. "a <u>series</u> of 64 subcarriers values", therefore 64 adjacent subcarriers)*is transmitted on a different transmit antenna in a given time interval* (see at least column 3 lines 54-60, column 4 lines 17-22 and column 5 lines 16-27).

Regarding **claim 18** (original), Perahia discloses the limitations as shown in the rejection of claim **15**. Perahia further discloses:

- *wherein each of said transmit antennas transmits a total of N long training symbols* (see at least Figure 5 and column 6 lines 29-45).

Regarding **claim 22** (original), Perahia discloses the limitations as shown in the rejection of claim **15**. Perahia further discloses:

- *wherein said legacy preamble further comprises at least one SIGNAL field* (see at least Figure 5 and column 6 lines 52-57).

Regarding **claim 23** (original), Perahia discloses the limitations as shown in the

rejection of claim **15**. Perahia further discloses:

- *wherein said legacy preamble is an 802.11 a/g preamble*(see at least column 6

  lines 32-36).

Regarding **claim 25** (original), Perahia discloses the limitations as shown in the

rejection of claim **15**. Perahia further discloses:

- *wherein N is two and wherein said two transmit antennas comprises* (see at least

  Figure 1-3) *transmit a legacy preamble having at least one long training symbol*

  and one additional long training symbol (e.g. total of 2 LTS) *on each of said two*

  transmit antennas (see at least Figure 5), *wherein half of the subcarriers*(e.g.

  subcarrier 0-31 of the 64 subcarriers, along with the subcarrier 32-64 of the 64

  subcarriers) *of the long training symbol are in a first subcarrier group* (as applied

  to the first antenna) *and the remaining half* (e.g. subcarrier 32-64 of the 64

  subcarriers, along with the subcarrier 0-31 of the 64 subcarriers) *of the*

  subcarriers of the long training symbol are in a second subcarrier group(e.g. as

  applied to the second antenna) (see at least column 3 lines 54-60, column 4 lines

  17-22 and column 5 lines 16-27).

Regarding **claim 26** (original), Perahia discloses the limitations as shown in the

rejection of claim **15**. Perahia further discloses:

- *whereby a lower order receiver* (e.g. SISO receiver) *can interpret said*

  transmitted data(see at least column 9 lines 44-65).

Regarding **claim 27** (currently amended), Perahia discloses *a method for receiving data*

(see at least Figure 2) *on at least one receive antenna transmitted by a transmitter*

having N (see at least column 4 lines 16-21) *transmit antennas in a multiple antenna*

communication system, said method comprising the steps of:

- *receiving a legacy preamble having at least one long training symbol and an*

  indication of a duration of a transmission of said data,

  - *and at least one additional long training symbols on each of said N*

    transmit antennas(see at least column Figure 5 lines 24-45)*,*

  - *each of said long training symbols having a plurality of subcarriers*(e.g. 64

    subcarrier values) *of subcarriers* (see at least column 3 lines 50-67)*,*

  - *wherein said subcarriers are grouped into a plurality of subcarrier*

    groups(e.g. by virtue of multiple antennas, each of these antennas is used

    to transmit OFDM symbols modulated by a group of 64 subcarriers, e.g.

    two antennas requires two groups of 64 sub-carriers, see at least column

    3 lines 54-60, column 4 lines 17-22 and column 5 lines 16-27)*,*

  - *and wherein each subcarrier group <u>comprises two or more adjacent</u>*

    <u>subcarriers </u>(e.g. "a <u>series</u> of 64 subcarriers values", therefore 64 adjacent

    subcarriers)<u> *and* </u>*is transmitted on a different transmit antenna in a given*

    time interval (see at least column 3 lines 54-60, column 4 lines 17-22 and

    column 5 lines 16-27);

- *and deferring for* an *indicated duration* (see at least Figure 5 and column 6 lines

  38-45).

Regarding **claim 28** (original), Perahia discloses the limitations as shown in the

rejection of claim **27**. Perahia further discloses:

- *wherein said method is performed by a SISO receiver* (e.g. a receiver capable of

  SISO operation, see at least Figure 4, and column 9 lines 44-67)

Regarding **claim 29** (original), Perahia discloses the limitations as shown in the

rejection of claim **27** and **29**. Perahia further discloses:

- *wherein said indication is transmitted in a SIGNAL field that complies with the*

  802.11 a/g standards (see at least column 6 lines 47-57).

Regarding **claim 30** (currently amended), Perahia discloses *a receiver* (i.e. wireless

bridge as shown Figure.1) *in a multiple antenna communication system having at least*

one transmitter having N (see at least column 4 lines 16-21) *transmit antennas* (see at

least Figure 3), *comprising:*

- *at least one receive antenna for receiving a legacy preamble having at least one*

  long training symbol and an indication of a duration of a transmission of said

  data(see at least column Figure 5 lines 24-45),,

  - *and N-1 additional* (see at least column Figure 5 lines 24-45, where N is 2

    in Perahia's instant embodiment) *long training symbols on each of said N*

    transmit antennas,

  - *each of said long training symbols having a plurality* (e.g. 64 subcarrier

    values) *of subcarriers* (see at least column 3 lines 50-67),

  - *wherein said subcarriers are grouped into a plurality of subcarrier*

    groups(e.g. by virtue of multiple antennas, each of these antennas is used

      to transmit OFDM symbols modulated by a group of 64 subcarriers, e.g.

      two antennas requires two groups of 64 sub-carriers, see at least column

      3 lines 54-60, column 4 lines 17-22 and column 5 lines 16-27),

    o *and wherein each subcarrier group <u>comprises tow or more adjacent</u>*

      <u>subcarriers</u> (e.g. "a <u>series</u> of 64 subcarriers values", therefore 64 adjacent

      subcarriers)<u>and</u> *is transmitted on a different transmit antenna in a given*

      time interval (see at least column 3 lines 54-60, column 4 lines 17-22 and

      column 5 lines 16-27);

- *and means for deferring for said indicated duration <u>of said transmission of said</u>*

    <u>data</u> (see at least Figure 5 and column 6 lines 38-45).

Claim Rejections - 35 USC § 103

7.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

8.   **Claim 2, 5, 6, 11, 16, 19, 20** and **24** are rejected under 35 U.S.C. 103(a) as

being unpatentable over Perahia in view of US 20040141548 A1 Shattil (hereinafter

Shattil).

Regarding **claim 2** (currently amended), Perahia discloses the limitations as shown in

the rejection of claim **1**. Perahia further discloses that the subcarriers used to modulate

a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia

does not disclose that *the* grouping *is based on a blocking technique.* However, in an

analogous field of endeavor, Shattil teaches using different sets (blocks of subcarrier,

more specifically when one block of subcarrier is used to modulate a symbol, the said

block of subcarrier thus blocking other subcarriers from being used, therefore a blocking

technique) of subcarriers to transmit symbols (see at least Shattil paragraph [0081]). It

would have been obvious to a person of ordinary skill in the art to modify Perahia by

applying the blocking technique taught by Shattil in order to improve efficiency and

performance, as discussed by Shattil.

Regarding **claim 5** (original), Perahia discloses the limitations as shown in the rejection

of claim **1**. Perahia further discloses that the subcarriers used to modulate a symbol can

be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia does not

specifically teach *wherein said subcarrier groups transmitted by a given transmit*

antenna are varied for each of the N long training symbols transmitted by said given

transmit antenna. However, in an analogous field of endeavor, Shattil teaches using

different groups of subcarriers to modulate a symbol (see at least Shattil paragraph

[0081]). It would have been obvious to a person of ordinary skill in the art to modify

Perahia in view of Shattil in order to improve efficiency and performance, as discussed

by Shattil.

Regarding **claim 6** (original), Perahia discloses the limitations as shown in the rejection

of claim **1** and **5**. Perahia further discloses that the subcarriers used to modulate a

symbol can be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia does

not specifically teach *wherein after transmission of said N long training symbols by each*

of said N transmit antennas, each of said N transmit antennas has transmitted each

subcarrier of said long training symbols only once. However, in an analogous field of

endeavor, Shattil teaches using different groups of subcarriers to modulate a symbol

(see at least Shattil paragraph [0081], therefore if a different set of subcarrier is applied to a different symbol e.g. the mapping is one to one, then the set of subcarriers will only be transmitted once for that series of symbols). It would have been obvious to a person of ordinary skill in the art to modify Perahia in view of Shattil in order to improve efficiency and performance, as discussed by Shattil.

Regarding **claim 11** (currently amended), Perahia discloses the limitations as shown in the rejection of claim **1**. Perahia does not specifically teach *wherein each of said long training symbols are orthogonal in the frequency domain.* However, in an analogous field of endeavor, Shattil teaches using different groups of subcarriers to modulate a symbol (see at least Shattil paragraph [0081], therefore symbols modulated by different groups of subcarriers, which are orthogonal due to the nature of OFDM, are orthogonal as well). It would have been obvious to a person of ordinary skill in the art to modify Perahia in view of Shattil in order to improve efficiency and performance, as discussed by Shattil.

Regarding **claim 16** (currently amended), Perahia discloses the limitations as shown in the rejection of claim **15**. Perahia further discloses that the subcarriers used to modulate a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia does not disclose that *the* grouping *is based on a blocking technique.* However, in an analogous field of endeavor, Shattil teaches using different sets (blocks of subcarrier, more specifically when one block of subcarrier is used to modulate a symbol, the said block of subcarrier thus blocking other subcarriers from being used, therefore a blocking technique) of subcarriers to transmit symbols (see at least Shattil paragraph [0081]). It

would have been obvious to a person of ordinary skill in the art to modify Perahia by

applying the blocking technique taught by Shattil in order to improve efficiency and

performance, as discussed by Shattil.

Regarding **claim 19** (original), Perahia discloses the limitations as shown in the

rejection of claim **15** and **18**. Perahia further discloses that the subcarriers used to

modulate a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65).

Perahia does not specifically teach *wherein said subcarrier groups transmitted by a*

given transmit antenna are varied for each of the N long training symbols transmitted by

said given transmit antenna. However, in an analogous field of endeavor, Shattil

teaches using different groups of subcarriers to modulate a symbol (see at least Shattil

paragraph [0081]). It would have been obvious to a person of ordinary skill in the art to

modify Perahia in view of Shattil in order to improve efficiency and performance, as

discussed by Shattil.

Regarding **claim 20** (original), Perahia discloses the limitations as shown in the

rejection of claim **15, 18** and **19**. Perahia further discloses that the subcarriers used to

modulate a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65).

Perahia does not specifically teach *wherein after transmission of said N long training*

symbols by each of said N transmit antennas, each of said N transmit antennas has

transmitted each subcarrier of said long training symbols only once. However, in an

analogous field of endeavor, Shattil teaches using different groups of subcarriers to

modulate a symbol (see at least Shattil paragraph [0081], therefore if a different set of

subcarrier is applied to a different symbol e.g. the mapping is one to one, then the set of

subcarriers will only be transmitted once for that series of symbols). It would have been

obvious to a person of ordinary skill in the art to modify Perahia in view of Shattil in

order to improve efficiency and performance, as discussed by Shattil.

Regarding **claim 24** (currently amended), Perahia discloses the limitations as shown in

the rejection of claim **15**. Perahia does not specifically teach *wherein each of said long*

training symbols are orthogonal in the frequency domain. However, in an analogous

field of endeavor, Shattil teaches using different groups of subcarriers to modulate a

symbol (see at least Shattil paragraph [0081], therefore symbols modulated by different

groups of subcarriers, which are orthogonal due to the nature of OFDM, are orthogonal

as well). It would have been obvious to a person of ordinary skill in the art to modify

Perahia in view of Shattil in order to improve efficiency and performance, as discussed

by Shattil.

9.   **Claim 3, 7, 17** and **21** is rejected under 35 U.S.C. 103(a) as being unpatentable

over Perahia in view of US 20030123381 A1 Zhuang et al. (hereinafter Zhuang).

Regarding **claim 3** (currently amended), Perahia discloses the limitations as shown in

the rejection of claim **1**. Perahia further discloses that the subcarriers used to modulate

a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia

does not specifically teach the grouping is *based on an interleaving technique.*

However, in an analogous field of endeavor, Zhuang discloses modulating OFDM

symbol over interleaved subcarriers (i.e. interleaving technique). it would have been

obvious to a person of ordinary skill in the art to modify Perahia in view of Zhuang in

order to fully realized the advantage of OFDM system as discussed by Zhuang(see at least Zhuang paragraph [0002]).

Regarding **claim 7** (original), Perahia discloses the limitations as shown in the rejection of claim **1**. Perahia does not specifically disclose *wherein a sequence of each of said long training symbols on each of said N transmit antennas are orthogonal.* However, in an analogous field of endeavor, Zhuang discloses modulating OFDM symbol using different subcarriers for different antenna (see at least paragraph [0019]), therefore symbols on each of the transmit antennas will be orthogonal due to modulation by orthogonal subcarriers. it would have been obvious to a person of ordinary skill in the art to modify Perahia in view of Zhuang in order to fully realized the advantage of OFDM system as discussed by Zhuang (see at least Zhuang paragraph [0002]).

Regarding **claim 17** (currently amended), Perahia discloses the limitations as shown in the rejection of claim **15**. Perahia further discloses that the subcarriers used to modulate a symbol can be grouped (e.g. specified, see at least column 6 lines 58-65). Perahia does not specifically teach the grouping is *based on an interleaving technique.* However, in an analogous field of endeavor, Zhuang discloses modulating OFDM symbol over interleaved subcarriers (i.e. interleaving technique). it would have been obvious to a person of ordinary skill in the art to modify Perahia in view of Zhuang in order to fully realized the advantage of OFDM system as discussed by Zhuang(see at least Zhuang paragraph [0002]).

Regarding **claim 21** (original), Perahia discloses the limitations as shown in the rejection of claim **15**. Perahia does not specifically disclose *wherein a sequence of each*

of said long training symbols on each of said N transmit antennas are orthogonal.

However, in an analogous field of endeavor, Zhuang discloses modulating OFDM

symbol using different subcarriers for different antenna (see at least paragraph [0019]),

therefore symbols on each of the transmit antennas will be orthogonal due to

modulation by orthogonal subcarriers. it would have been obvious to a person of

ordinary skill in the art to modify Perahia in view of Zhuang in order to fully realized the

advantage of OFDM system as discussed by Zhuang (see at least Zhuang paragraph

[0002]).

10.   **Claim 14** rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia in

view of US 7103325 B1 Jia et al.(hereinafter Jia)

Regarding **claim 14** (original), Perahia discloses the limitations as shown in the

rejection of claim 1. Perahia does not specifically discloses *transmitting a field indicating*

said number N of transmit antennas. However, in an analogous field of endeavor, Jia

teaches transmitting to a receiver information regarding number of antennas used for

communication (see at least column 6 lines 46-49 and column 8 lines 67 and column 9

lines 1-2). It would have been obvious to a person of ordinary skill in the art to modify

Perahia in view of Jia to transmit the information regarding number of antennas used for

the transmission in order to efficiently configure the communication device as taught by

Jia.

Response to Arguments

11.   Applicant's arguments filed on 6/11/2009 have been fully considered but they are

not persuasive.

Regarding independent claim 1, 15, 27 and 30, Applicant submits that the cited prior art

Perahia does not teach or suggest grouping of subcarriers into a plurality of subcarrier

groups, Applicant further submits that Perahia does not teach that each subcarrier

group comprises two or more adjacent subcarriers (see at least Applicant's remarks

page 8).

The Examiner respectfully disagrees. The Examiner points to Perahia column 3 lines

54-60, column 4 lines 17-22 and column 5 lines 16-27, where Perahia discloses

transmitting via multiple antennas. According to Perahia, each of these antennas is

used to transmit OFDM symbols, wherein each OFDM symbol is modulated by a group

of 64 subcarriers, therefore, each transmission of OFDM symbols on multiple antennas

constitutes as grouping of subcarriers e.g. two antennas requires two groups of 64 sub-

carriers. Furthermore, according to Perahia (see column 3 lines 54-60), for each OFDM

symbol transmitted, "a series of 64 subcarrier values" are apply to it, therefore, the

OFDM symbol is modulated onto the group of 64 adjacent subcarriers.

Conclusion

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to YU (Andy) GU whose telephone number is (571)270-

7233. The examiner can normally be reached on Mon-Thur 8:30-5:30.

       If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Lester G. Kincaid can be reached on 5712727922. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

       Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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